

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012638**Date Inspected:** 16-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2130**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Tom Pasqualone**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the E1/E2 and E2/E3 field splices:

A). Welding of the Field Splice E2 to E3.

The QAI observed the Flux Cored Arc Welding (FCAW-G) process on the deck plate field splice identified as Weld Number (WN): 1E-2E-A, Weld Segments A1-A5. The horizontal welding (2F) was performed by the AB/F welding personnel Mitch Sittinger ID-0315, segments A4-A5, Songtao Huang ID-3794, segments A3-A4 and Chun Fai Tsui ID-3426, segments A1-A2 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-F3200-2 Rev. 0. The WPS was also used by the AB/F Quality Control (QC) Inspector Tom Pasqualone to perform QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the welding of the 12mm x 38mm backing bar to the E3 deck plate. Later in the shift the QAI observed the QC inspector verifying the welding parameters of each welder and were noted as follows: for the welder Mitch Sittinger 241 amps, 23.9 volts and a travel speed measured at 317 mm/minute, for the welder Songtao Huang 247 amps, 23.1 volts and a travel speed measured at 311 mm/minute and Chun Fai Tsui 238 amps, 23.3 volts with a travel speed measured at 319 mm/minute. The QC inspector also monitored the surface temperatures during the field welding and the following was observed and noted by the QAI: the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later in the shift the QAI observed the welder James Zhen ID-6001 performing the welding of the extension run-off tabs at the north and south end of the transverse weld joint utilizing the Shielded Metal Arc Welding (SMAW) as per the WPS

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identified as ABF-WPS-D15-F1200A Rev. 0. During the welding the QC inspector verified the welding parameters and were observed and noted by the QAI as 122 amps. The welding of the extension plates and backing bar was completed during this shift.

The QAI also observed a misalignment of the transverse field splice deck plate. The misalignment exceeds the maximum allowable dimensional tolerance required. An Incident Report identified as TL-15 was generated on this date in regards to this issue.

QA Observation and Verification Summary

The QA inspector observed the QC activities, the SMAW and FCAW-G welding of the E2/E3 field splice and the utilizing the WPS's as noted above which appeared to be posted at the appropriate weld station. The welding parameters and surface temperatures were verified by the QC inspector's and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The 1.4mm diameter consumable identified as ESAB Dual Shield 70 Ultra Plus and the 3.2mm diameter consumable identified as ESAB Atom Arc was utilized during this scheduled shift appeared to be in compliance accordingly with the AWS Specification A5.20 and the AWS Classification E71T-1M for the FCAW-G process and the AWS Specification A5.1-04 and AWS Classification E7018-HR4. The QC inspection and welding performed on this shift was not completed and appeared to be in general compliance with the contract documents. The QAI randomly verified the QC inspection, the welding parameters and surface temperatures utilizing various inspection equipment and gages, a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs below illustrates the work observed during this shift.



Summary of Conversations:

There were no pertinent conversations discussed in regards to the project except as noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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Inspected By: Reyes,Danny

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer